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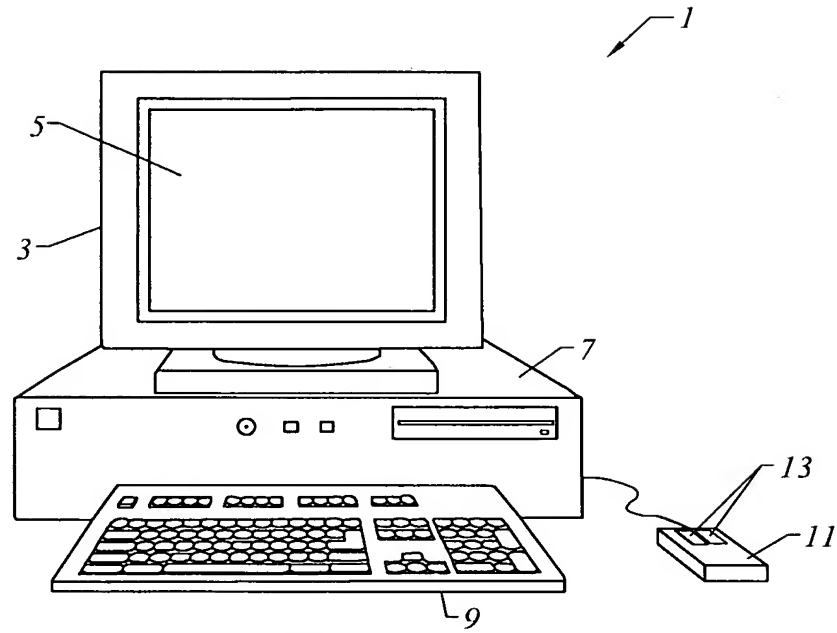


FIG. 1A

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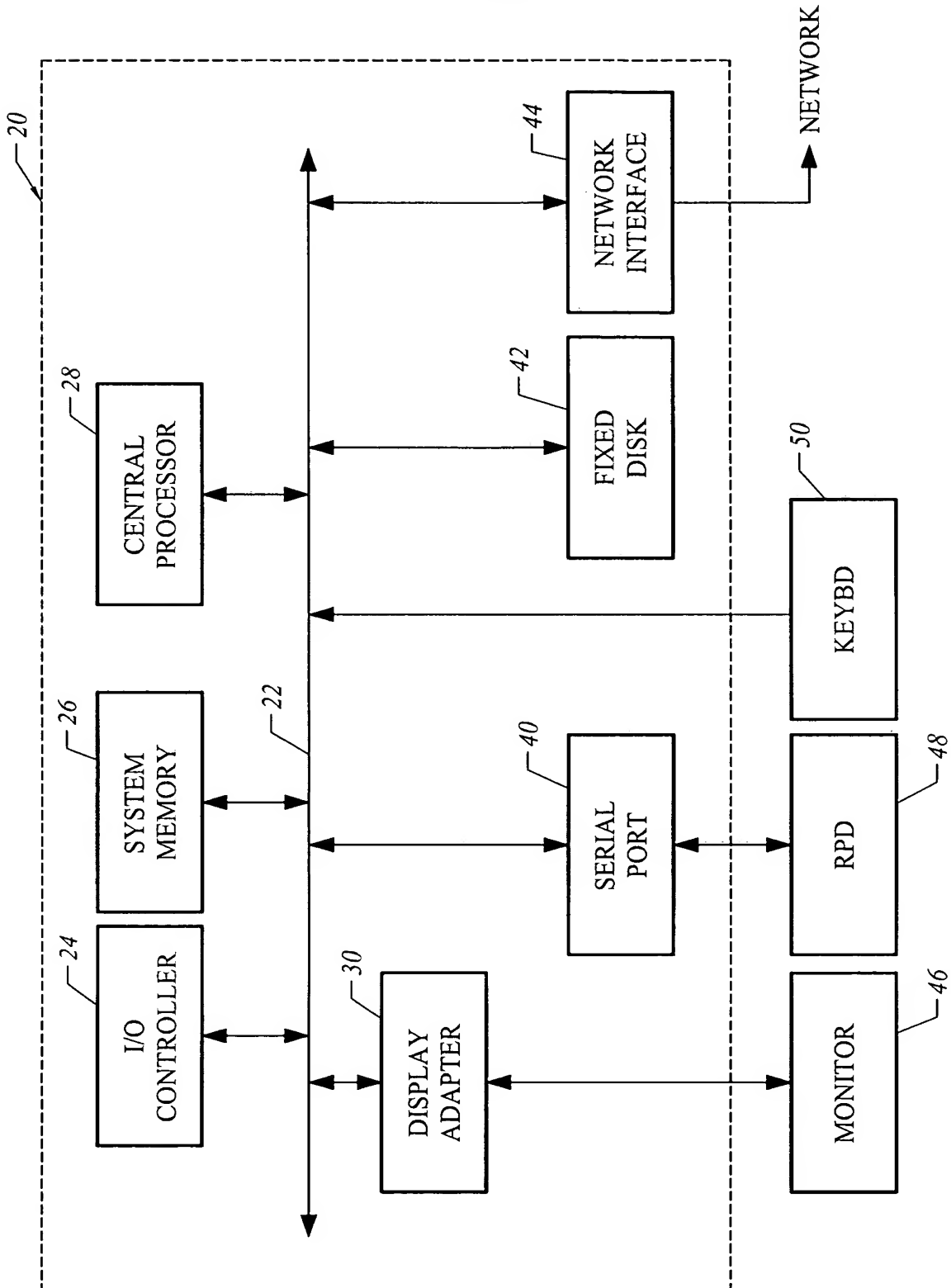


FIG. 1B

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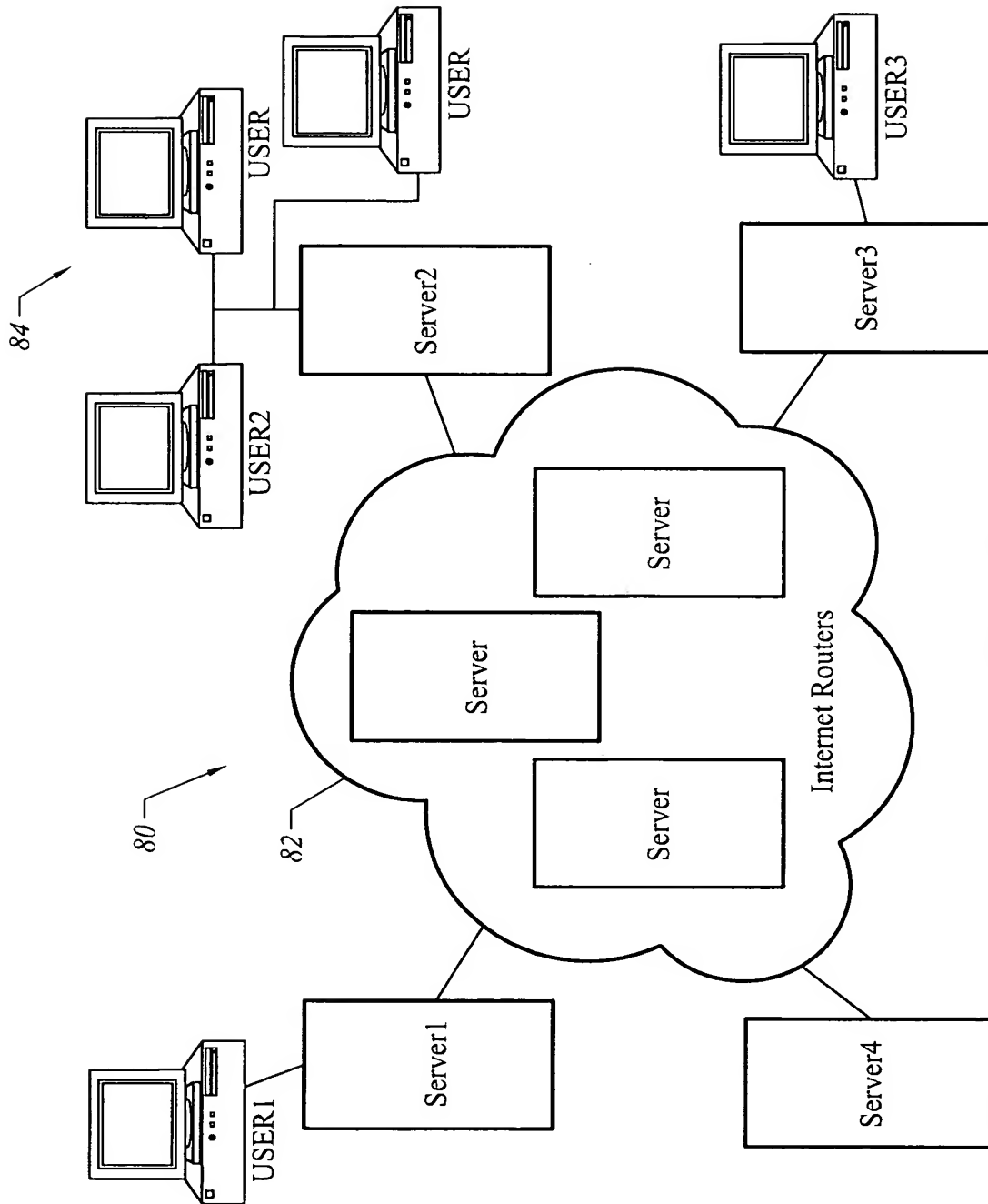


FIG. 1C

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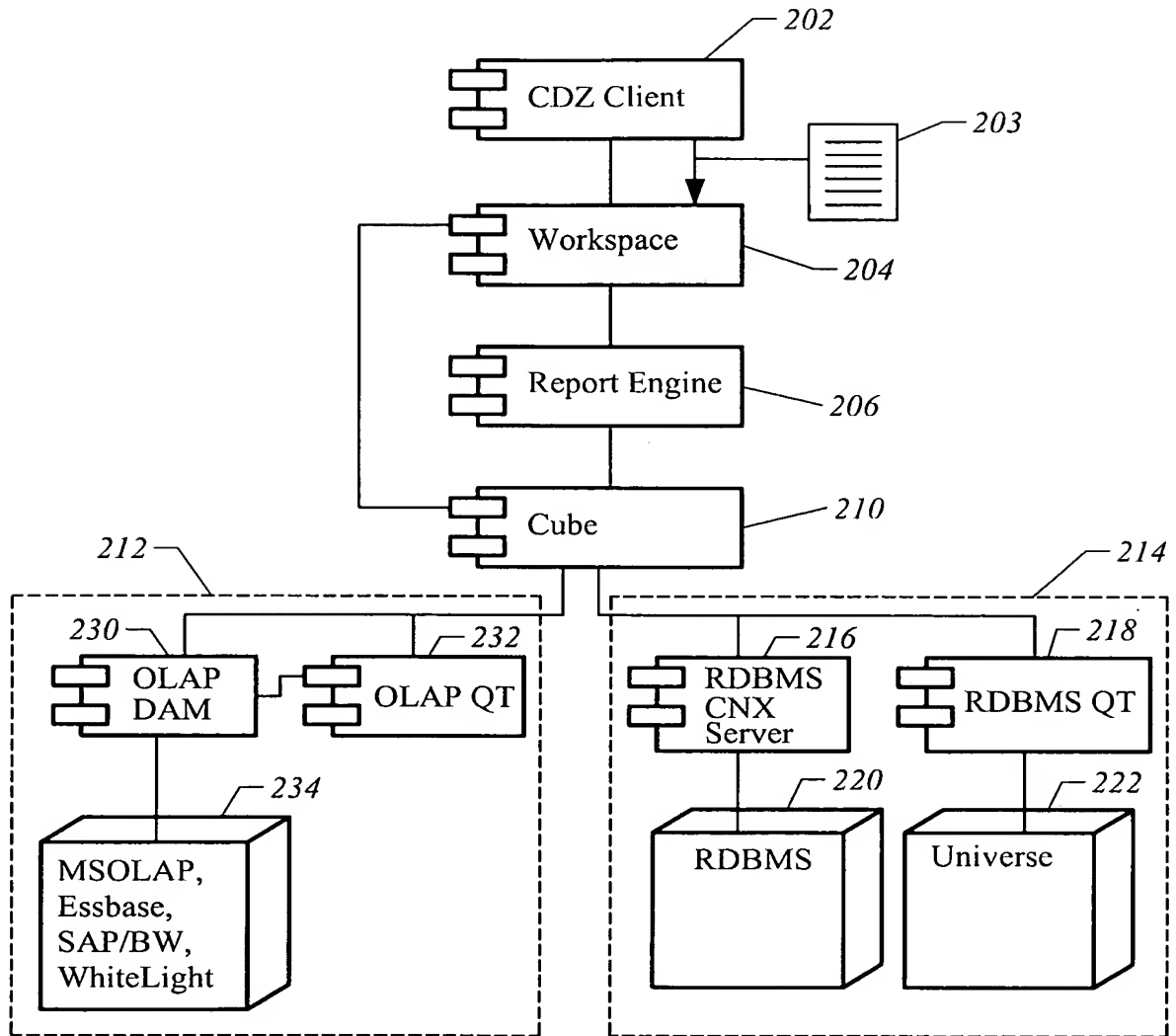


FIG. 2

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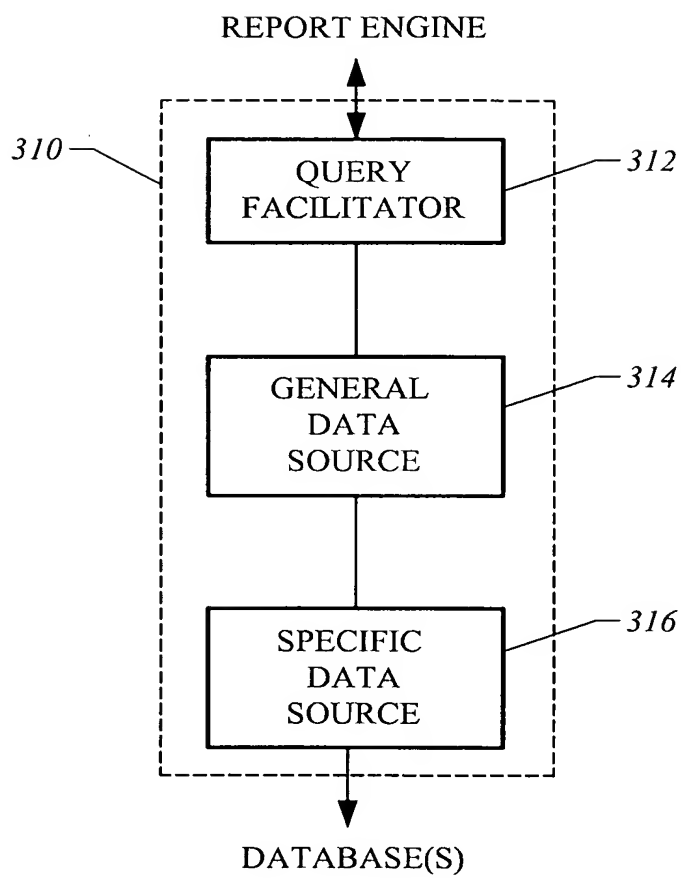
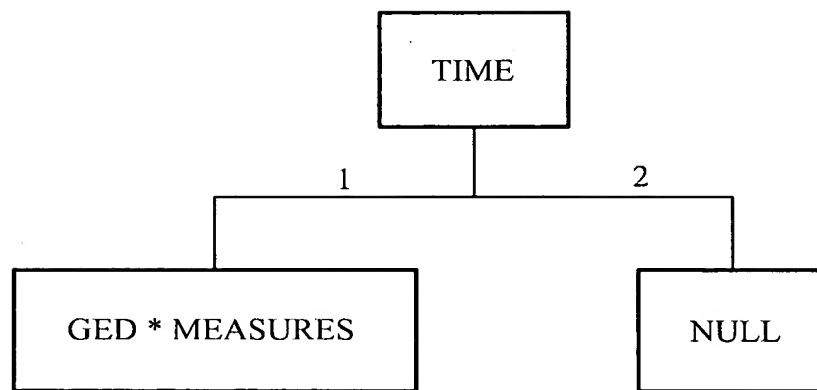


FIG. 3



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*FIG. 5*

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Reporting Object	Function	Query	# of Axes	Zones	Container	Atomic
Document	<ul style="list-style-type: none"> <li>Document can only contain Reports</li> <li>For all Reports in a document are based on the same data source.</li> </ul>		0		✓	
Report	<ul style="list-style-type: none"> <li>A Report can be contained by a Document.</li> <li>A Report contains a Page Header, Body, and Footer.</li> <li>A Report has one or more pages.</li> <li>The Page Header and Footer are repeated on each page.</li> </ul>	✓	0		✓	
Section	<ul style="list-style-type: none"> <li>Defines a band with infinite width and a specific height.</li> <li>A Section can be contained by a Report or another Section.</li> </ul>	✓	1	✓	✓	
VTable	<ul style="list-style-type: none"> <li>Vertical Table</li> </ul>	✓	1	✓	✓	
HTable	<ul style="list-style-type: none"> <li>Horizontal Table</li> </ul>	✓	1	✓	✓	
XTable	<ul style="list-style-type: none"> <li>Cross Table</li> </ul>	✓	2	✓	✓	
Graph	<ul style="list-style-type: none"> <li>Cannot contain other items</li> <li>Has two axes although certain graph types ignore second axis.</li> </ul>	✓	2			✓
Cell	<ul style="list-style-type: none"> <li>Contain a measure, string, date, scalar expression (expression that returns only one value) or a picture.</li> </ul>		0			✓
Bag	<ul style="list-style-type: none"> <li>Do not normally have DataSpace expression.</li> </ul>		0		✓	
HStripe	<ul style="list-style-type: none"> <li>Bag where all instances of contained objects are aligned horizontally.</li> </ul>		0		✓	
VStripe	<ul style="list-style-type: none"> <li>Bag where all instances of contained objects are aligned vertically.</li> </ul>		0		✓	

FIG. 6



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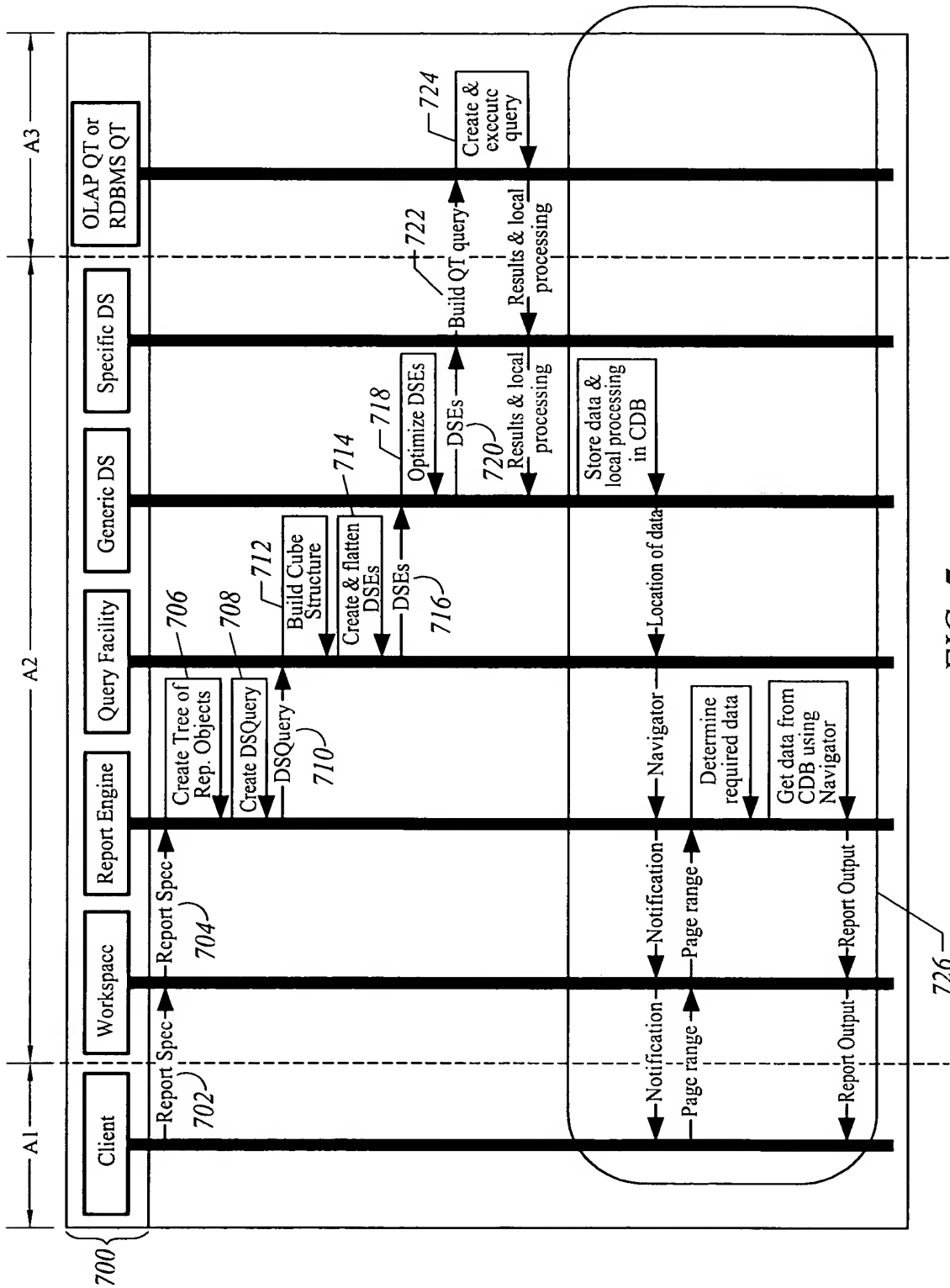


FIG. 7

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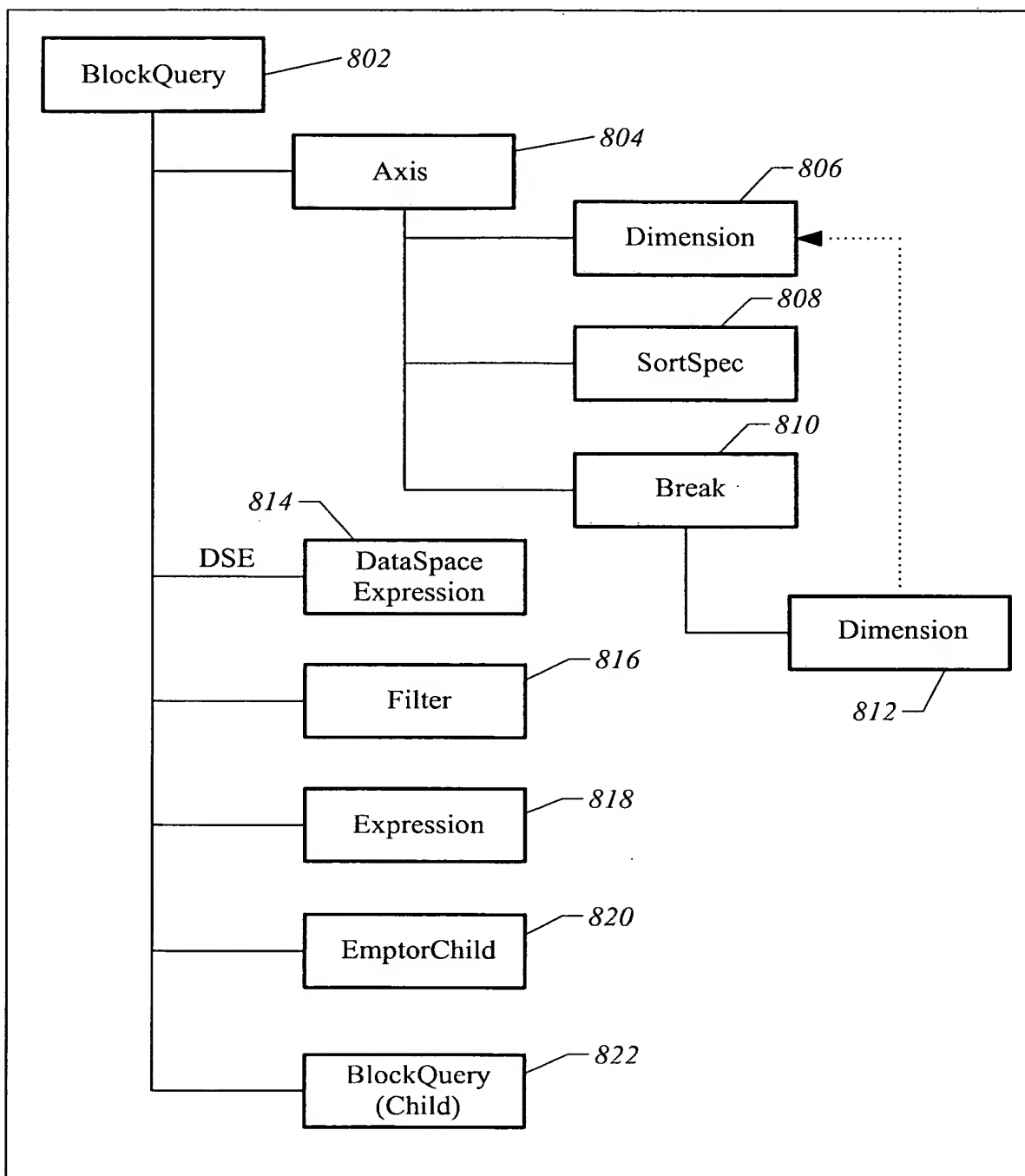


FIG. 8

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Customer XYZ

Time	Geography	Product	Sales/1000
1999	US	SKU200	100
1999	France	SKU200	200
1999	US	SKU300	50
1999	France	SKU300	25
2000	US	SKU200	25
2000	France	SKU200	200
2000	US	SKU300	200
2000	France	SKU300	EMPTY
			800

FIG. 9

Table:

Cell 1	Cell 2	Cell 3	Cell 4	} Header Stripe
Cell 1	Cell 2	Cell 3	Cell 4	
			Cell 4	

FIG. 10

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1104

1104		
1102	1106	1108
Object	Axes	DataSpace Expression (other than 'CurrentMember')
Document	None	None
Report	None	Customer: "XYZ"
Title Cell	None	Scalar: Customer.CurrentMember.Caption
Table	None	Time: Years.Members Geography: Country.Members
		Product: Products.Members
Header Stripe	None	None
Geo Header Cell	None	Scalar: 'Geography.Caption'
Time Header Cell	None	Scalar: 'Time.Caption'
Product Header Cell	None	Scalar: 'Product.Caption'
Sales Header Cell	None	Scalar: "Sales/100" (a constant)
Body	Axis 0: Time, Geography, Produce	None
Body Stripe	None	None
Geo Cell	None	Scalar: Geography.CurrentMember.Caption
Time Cell	None	Scalar: Time.CurrentMember.Caption
Product Cell	None	Scalar: Product.CurrentMember.Caption
Sales Cell	None	Measures: Sales Scalar: Value/100
Footer Stripe	None	None
Footer Cell	None	Measures: Sales Scalar: Value/100

FIG. 11

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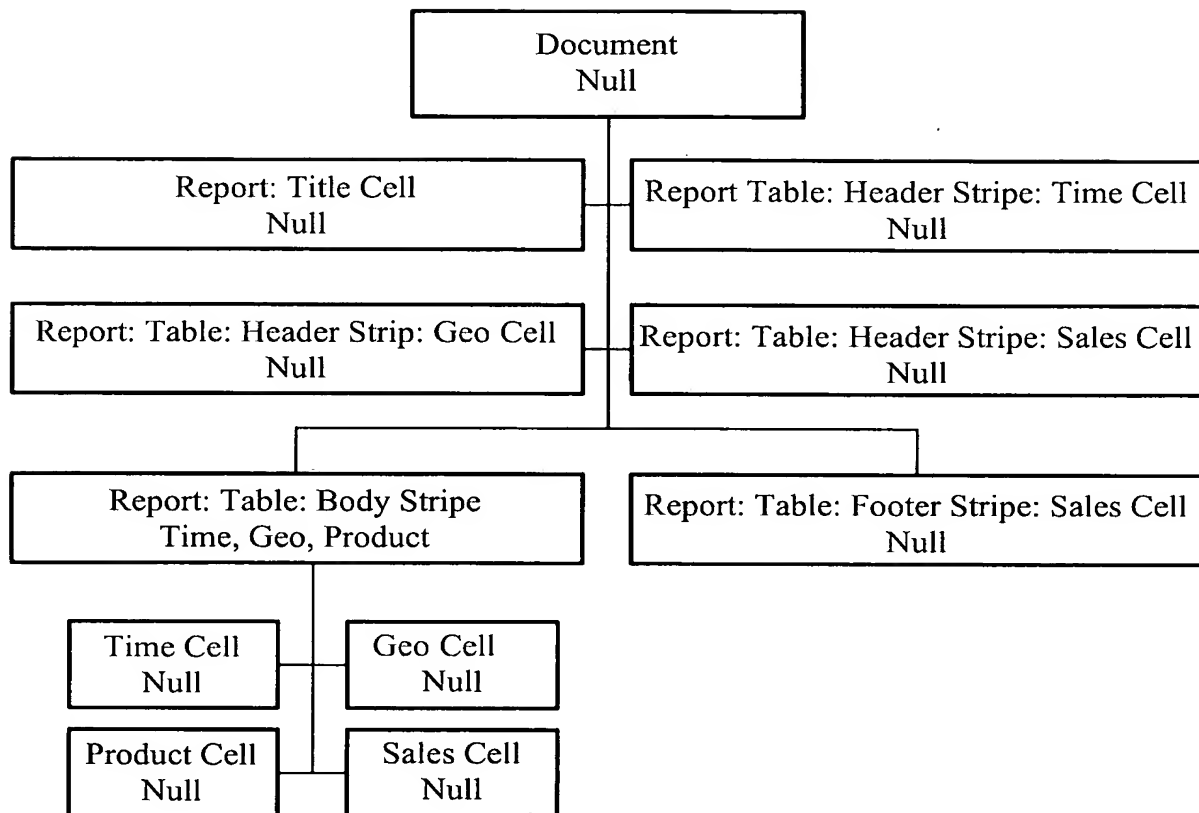


FIG. 12

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```
Report{
    Customer: Customer.XYZ
    Time: Time.All // default members
Product:,Product.All

Geo: Geo.All
Measure: Revenue
Scalar: None
}
TitleCell{
    Customer Of report
    Time, Product, Geo, Measure: None
    Scalar=Customer_Caption
}
Table{
    Customer of Report
    Geo: Country.Members
    Time: Years.Members
    Product: Product.Members
    Measure: None
Scalar: NonEmptyContents // a (more efficient) equivalent to: Value Of {
Customer, Time, Product, Geo of Table
Measure = Sales
Scalar: Value/100
}
}
GeoHeaderCell{
    Geo, Customer, Time, Product, Measure: None
    Scalar: Dimensions.Geo.Caption // the caption of the dimension, not of a member
}
... // same for other headers
Body{// only captures axes
    Time, Geo, Product, Customer, Measure of Table
}
Geo Cell {
    Time, Product, Customer, Measure: None
Geo of Body
    Scalar: Geo_Caption
}
.../// idem for other caption cells
ValueCell {
    Time, Product, Customer, Geo of Body
    Measure: Sales
    Scalar: Value/100
}
```

FIG. 13